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Elizabeth Miller
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Sept. 3, 2002
Date

ATTY DOCKET NO. 10991572-1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: J. Robert Mitchell

Group Art Unit: 1743

Serial No.: 09/426,111

Examiner: P. Kathryn Bex

Filed: October 22, 1999

Title: FLUIDIC STRUCTURES WITHIN AN ARRAY PACKAGE

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

RESPONSE

The Examiner is thanked for the final Office Action dated 06/03/02. Claims 2-11, 30-32 and 42-47 are presently under consideration (the remainder being withdrawn from consideration) and all are rejected. No claim amendments are being made in the present response. A Notice of Appeal is enclosed. The Examiner's rejections are discussed in sequence below.

Rejection of Claims 2-11, 30-32, 42-47 under 35 U.S.C. 112, First Paragraph - Paragraph 3 of the Action

The Examiner first rejected claims 2-11, 30-32, and 42-47 under 35 U.S.C. 112, first paragraph as containing new matter. Specifically, the Examiner contended that the phrase in claim 5 "a first set of multiple fluid distribution channels each

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disposed between the first port and the chamber" is not supported by the specification. As the Examiner points out, the support required is for the specification to reasonably convey that the applicant had possession of the invention at the time the application was filed. In the present case, claim 5 previously (and still does) recite that the multiple features face into "a chamber" (i.e. a single chamber). The previous language of claim 5 that the each of the channels was disposed between the first port and the multiple features necessarily means the channels are disposed between the first port and the chamber since the features are in the chamber. Furthermore, that the each of a first set of multiple fluid distribution channels is disposed between the first port and the chamber is explicitly shown in FIG. 5. Furthermore, page 3, lines 29-32 recite "For example, the multiple fluid distribution channels may be disposed between a port and the chamber such that fluid flow width increases between the first port to the first set of fluid distribution channels."

Given the above then, not only does the specification "reasonably convey that the applicant had possession of the invention" but even expressly does so. Accordingly, it is submitted that this rejection should be withdrawn.

Rejection of Claims 2-11, 30-32, 42-47 under 35 U.S.C. 112, Second Paragraph - Paragraph 5 of the Action

The Examiner next rejected claims 2-11, 30-32, 42-47 under 35 U.S.C. 112, second paragraph, as being indefinite. The Examiner contended that the "chamber" is defined within the claims as being formed by the substrate 10 and housing 44. The Examiner then stated that FIGS. 4-5 showed that this chamber can extend from the outlet port 42 to the outlet port 50, making the chamber able to house the fluid distribution channels. First, FIG. 4 shows array 10 (with surface 11b) while FIG. 5 is a cut away top view. From a comparison of FIGS. 4 and 5 nothing indicates that the array 10 extends beyond the channels formed between baffles 44, 54. So the Examiner's interpretation of FIGS. 4 and 5 is incorrect and for this reason alone, the rejection should be withdrawn.

if Synonyms
they
Chamber
If they mean
Same
things apply
should return
to original
language

Fig 4 is
bottom
view

Substrate

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Second, on the question of what is required by 35 USC § 112, second paragraph, the Federal Circuit's discussion in Miles Laboratories Inc. v. Shandon Inc., 27 USPQ 1123 @ 1126 (Fed.Cir. 1993) is instructive:

"The test for definiteness is whether one skilled in the art would understand the bounds of the claim when read in light of the specification. *Orthokinetics*, 806 F.2d at 1576. If the claims read in light of the specification reasonably apprise those skilled in the art of the scope of the invention, § 112 demands no more. *Hybritech*, 802 F.2d at 1385. The degree of precision necessary for adequate claims is a function of the nature of the subject matter. *Id.*"

Further, M.P.E.P. § 2173 outlines the same approach when considering the second paragraph of 35 USC § 112. Turning to claim 5, that claim itself defines a first port, a chamber and a first set of fluid distribution channels "between" the first port and the chamber. Thus, the claim language is totally self-consistent in defining the distribution channels "between" the other two elements. Not only is one skilled in the art is not only "reasonably apprised" of the scope of the claimed invention from the foregoing language, but the language is explicitly clear. For this additional reason, this rejection should be withdrawn.

Rejection of Claim 5 under 35 U.S.C. 102(b) over Winkler et al. (USP 5,384,261) - Paragraph 7 of the Action

The Examiner next rejected claim 5 as being anticipated by Winkler et al. As pointed out in the previous response, claim 5 recites "a first set of multiple fluid distribution channels each disposed between the first port and the chamber" (i.e. the same chamber). The Examiner refers to the housing in Winkler et al. including a first port 411 and "the first set of multiple fluid distribution channels 409 disposed between the first port 411 and the chamber (FIG. 4B)." However, with respect, the Examiner misconstrues Winkler et al. In particular, as can be seen, for example, in FIGS. 5 and 7 of Winkler et al., Winkler et al.'s channels pass over multiple different respective regions of the substrate (not into the same chamber). Again in column 8, lines 29-34, Winkler et al. makes it clear that each "channel" passes over its own unique area on substrate 401. Furthermore, if the Examiner is contending that channels 409 of Winkler et al. are the "fluid distribution channels" of claim 5, then the Examiner has failed to point out where in Winkler et al. is the "chamber" such that

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the set of multiple fluid distribution channels 409 is disposed between the first port 411 and the "chamber" (into which chamber "the multiple features face"), all as required by claim 5. Accordingly, this rejection should be withdrawn for this reason alone (i.e. that the Examiner has failed to satisfy her burden of establishing even a *prima facie* case for the anticipation rejection).

Furthermore, it is clear from Winkler et al. that the only possible "chamber" might be argued to be outlet 413, but this does not satisfy the claim 5 requirement for being a chamber into which the multiple features face. Accordingly, for this additional reason (i.e. the referenced in fact do not disclose the claimed invention) the present rejection should be withdrawn.

It is noted that in "Response to Arguments" section of the Action, the Examiner states that in relation to the anticipation rejection based on Winkler and that based on Juncosa et al. (see below), that the argument that the channels are not disposed between the first port and the "same" chamber is not germane to the issue since Applicant has not excluded such a feature (i.e. multiple chambers from the claim). While it may be true that multiple chambers are not excluded from the claim, this is not the issue. The issue is with regard to the configuration in relation to the chamber that is recited. The rejected claims recite "'a first set of multiple fluid distribution channels each disposed between the first port and the chamber". The Merriam-Webster On-Line Collegiate Dictionary (as of 09/03/02; available at www.merriam.com) provides in the first definition of "the" as follows:

"1 a -- used as a function word to indicate that a following noun or noun equivalent is definite or has been previously specified by context or by circumstance <put *the* cat out>"

Thus "the chamber" refers to the same chamber previously specified in the claim. As a result the fluid distribution channels are disposed between the first port and that specified chamber (not their own different chambers as in Winkler and Juncosa).

Rejection of Claim 5 Under 35 U.S.C. 102(b) Over Freeman (WO 96/30124) - Paragraph 8 of the Action

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The Examiner rejected claim 5 under 35 U.S.C. 103(b) as being anticipated by Freeman. The Examiner correctly notes that Freeman discloses that all of the channels disclosed therein are valved by a three-way valve mechanism 90. However, claim 5 recites that "at least some of the fluid distribution channels are valved so as to be selectively closable or openable to prevent or permit fluid flow out of the chamber to the first port" (emphasis added). Merriam-Webster's On-Line Collegiate Dictionary (as of 09/03/02; available at www.merriam.com) provides the first definition of "select" as follows

1 : chosen from a number or group by fitness or preference"

Thus, claim 5 requires that at least some of the channels can be chosen from the group to be closed or opened. On the other hand, the three-way valve 90 in Freeman does not allow such selection of any of the channels 89 (they are either all closed or open). In view of this difference between the device in Freeman and the claimed invention, the present rejection should be withdrawn.

at least
"some" can include
all of the channels
language

Rejection of Claims 2-4, 6, 9, 30-31, 42 Under 35 U.S.C. 102(e) Over Juncosa et al. (USP 6,225,109) - Paragraph 9 of the Action

The Examiner rejected claims 2-4, 6, 9, 30-31, 42 under 35 U.S.C. 102(e) as being anticipated by Juncosa et al. The Examiner references FIGS. 2 and 18 of Juncosa et al. and identifies chamber 27, 130 which is accessible through a first port 23, 134, which housing includes a first set of multiple fluid distribution channels 25, 142. Considering first FIG. 2, that device is shown in exploded view in FIG. 3 of Juncosa et al. As can be seen in FIG. 3, each port of the fluid distribution channels is disposed between the "first port 23" (Examiner's characterization) and its own unique "chamber 27". On the other hand, the rejected claims require "a first set of multiple fluid distribution channels each disposed between the first port and the chamber" (that is, each of the channels are disposed between the first port and the chamber - i.e. the same chamber). The Examiner has not pointed to any such configuration in FIG. 2 of Juncosa et al. nor can any be found. With regard to FIG. 18 (the device of which is shown in the exploded view of FIG. 19) the "first set of multiple fluid distribution channels 142" are not disposed between the "first port 134" and any chamber as

see Fig 18, ref #
the branched

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required by the claims. Note that the Examiner identified a "chamber 130" in FIG. 18 but Juncosa et al. itself defines 130 as the overall "assay device" (see, for example, column 10, lines 6-7). Nor is there any same chamber in Juncosa et al.'s FIG. 18 device with which "channels 142" communicate, into which chamber the multiple features face (as required by these claims).

Accordingly, for at least the above reasons the Examiner has failed to satisfy her burden of establishing a *prima facie* case of anticipation, and the present rejection should therefore be withdrawn.

Rejection of Claims 10-11 Under 35 U.S.C. 103(a) Over Winkler et al. or Freeman in view of Besemer et al. (USP 6,287,850) - Paragraph 12 of the Action

The Examiner next rejected claims 10, 11 under 35 U.S.C. 103(a) over Winkler et al. or Freeman, or Juncosa et al., in view of Besemer et al.. These claims are directly or indirectly dependent upon claim 5, which is not rejected under this heading and accordingly should be allowed for the same reasons as claim 5.

Rejection of Claims 7-8, 32 Under 35 U.S.C. 103(a) Over Winkler et al. or Freeman in view of Jun et al. - Paragraph 13 of the Action

The Examiner next rejected claims 7, 8 and 32 under 35 U.S.C. 103(a) as being unpatentable over Winkler et al., or Freeman, in view of Jun et al. Claims 7, 8 are directly or indirectly dependent upon claim 5 and should be allowed for the same reasons as claim 5 (which is not rejected under this rejection).

In addition, claims 7, 8, and 32, all require a "first set of multiple fluid distribution channels each disposed between the first port and the chamber" (i.e. the same chamber). As discussed above, Winkler et al. does not disclose such a feature (nor does it suggest such a feature). While Freeman appears to show such an arrangement in Fig. 7b, there is no motivation to use the vapor bubble system of Jun et al. in Freeman's Fig. 7b device and, even if one did, the claimed invention would be not be obtained. On the first point, it is completely unclear how one could replace Freeman's three-way valve 90 with the bubble system of Jun et al. (which inherently

- no motivation

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cannot act as a three-way valve) so one is not motivated by the references to try the combination now suggested by the Examiner. On the second point, even if one did somehow make such a combination the rejected claims require that a bubble formation device be disposed in at least some of the fluid distribution channels (which are each disposed between the first port and the chamber). If one makes the combination suggested by the Examiner (not the references) with Freeman's Fig. 7b device, then one would simply try to replace the existing valve 90 in some manner with a bubble valve rather than adding a redundant valve to channels 89 (which is not taught or suggested by Freeman, nor by Jun in which the bubbles are used as a temporary obstruction mechanism during pumping of liquid with other bubbles). Thus, for either of the foregoing reasons (lack of suggestion from the references to make the combination; claimed device still not obtained even if the combination was made), the present rejection of claim 32 should be withdrawn.

In the "Response to Arguments" section of the Action the Examiner states again that Jun et al. is relied on for the motivation for using a bubble forming device as a valve therefore reducing the need for valve components. However, there is no motivation to place such a valve into Freeman's device in FIG. 7B for several reasons. First, each bubble valve still requires a part to form a bubble. Placing five such devices into the channels in Freeman to replace the single three-way valve 90 is not a reduction in parts. Second, as the Examiner points out Freeman's device uses a three-way valve 90. Jun et al.'s bubble valves are either open or closed, they are not three-way valves as required by Freeman (and it is not clear how bubble valves could even be made three-way). Thus, for either one of the foregoing reasons the references do not provide the motivation for the combination now suggested by the Examiner.

Rejection of claims 43-44 Under 35 U.S.C. 103(a) Over Juncosa et al. in view of Katoot et al. (USP 6,184,030) - Paragraph 14 of the Action; Rejection of claims 45-47 Under 35 U.S.C. 103(a) Over Winkler et al. or Freeman in view of Jun et al. and Katoot et al.

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The Examiner next rejected claims 43 and 44 under 35 U.S.C. 103(a) as being unpatentable over Juncosa et al, in view of Katoot et al. (USP 6,184,030), and claims 45-47 under 35 U.S.C. 103(a) as being unpatentable over Winkler et al. or Freeman in view of Jun et al. and Katoot et al. These claims are directly or indirectly dependent upon claims 31 or 32 and should be allowed for the same reasons as those claims (which are not rejected under this rejection).

In view of the above, it is submitted that the outstanding rejections should be withdrawn and claims 2-11, 30-32 and 42-47 allowed. If the Examiner believes there are any outstanding issues which might be resolved by means of a telephone conference, she is invited to call Gordon Stewart at (650)485-2386.

Respectfully submitted,



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